

REMARKS

Claims 1-10, all the claims pending in the application, stand rejected on prior art grounds.

Claim Objections

The Examiner objects to claims 7-9 for reciting “sender.” The Examiner asserts that although the claim language appears to be referring to a device, apparatus, or system, the Examiner suggests further clarification of the term “sender.” Applicants amend the claims to recite a “transmitter,” and respectfully request withdrawal of the objection.

Claim Rejections - 35 U.S.C. § 103(a)

The Examiner has rejected claims 1, 2, 6-8, and 10 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hedberg in view of Hiramatsu and further in view of U.S. Patent Publication No. 2003/0210668 to Malladi et al. (hereinafter “Malladi”). Applicants submit that the claims are patentable.

For example, claim 1 recites splitting the plurality of user equipments approximately evenly into a plurality of groups, and assigning an antenna of a set of antennas to each of the plurality of groups.

Hedberg is directed to high-speed downlink packet-data access (HSDPA) having a high-speed downlink shared channel (HS-DSCH) which is shared in the time domain (i.e. allocated to one user at a time) and exploits multi-user diversity. Every user equipment (UE) to which data can be transmitted on the HS-DSCH has an associated dedicated physical channel (DPCH) which is used to carry power control commands for the associated uplink and other services, such as circuit switched voice. HSDPA terminals will camp on the same carrier as R99 terminals.

The Examiner asserts that Hedberg's HS-DSCH corresponds to the claimed code-multiplexed shared channel and that Hedberg's DPCH corresponds to the claimed dedicated channel. The Examiner further asserts that Hedberg discloses that a second signal is sent over the alleged code-multiplexed shared channel (HS-DSCH), but acknowledges that Hedberg does not teach that transmit diversity is applied in sending a first signal over the alleged dedicated channel (DPCH). The Examiner relies on Hiramatsu to supply this deficiency.

Hiramatsu is directed to the effects of applying transmit diversity to a DPCH. The Examiner asserts that it would have been obvious to apply this concept to Hiramatsu to enhance capacity, coverage, reliability, and improvement of the wireless system.

The Examiner acknowledges that the combination of Hedberg and Hiramatsu does not teach that first and second signals are sent simultaneously. The Examiner relies on Malladi to supply this deficiency.

Malladi is directed to a code-division multiple access (CDMA) communication system 100 having a number of base stations 104 and various user equipment (UE) 106. On the downlink, data for a DPCH and an HS-DSCH of each UE is received and processed, modulated, and converted into one or more analog signals to provide a downlink signal. The downlink signal is transmitted to a UE via an antenna 624 designated to the UE.

The Examiner asserts that Malladi teaches sending a first signal on a dedicated channel (DPCH) and a second signal on a code-multiplexed shared channel (HS-DSCH) simultaneously, as the signals are combined and sent in a single downlink signal. The Examiner asserts that it would have been obvious to modify the method of Hedberg and Hiramatsu to send first and second signals simultaneously in order to transmit both HS-DSCH data and associated DPCH

data for each user in providing enhanced high speed data service with efficient resource utilization.

However, Hedberg, Hiramatsu, and Malladi are all silent about the manner in which antennas are allocated to UEs. Thus, Applicants submit that the references, alone or in combination, do not teach or suggest splitting the plurality of user equipments approximately evenly into a plurality of groups, and assigning an antenna of a set of antennas to each of the plurality of groups, as recited by claim 1. Accordingly, Applicants submit that the claim is patentable.

Independent claims 6, 7, and 10 recite, in some variation, features similar to those discussed above in conjunction with claim 1. Thus, Applicants submit that these claims are patentable at least for reasons analogous to those discussed above regarding claim 1. Applicants also submit that claims 2 and 8, being dependent on claims 1 and 7, respectively, are patentable at least by virtue of their dependency.

The Examiner has rejected claims 3-5 and 9 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hedberg in view of Hiramatsu in view of Malladi and further in view of U.S. Patent Publication No. 2002/0145988 to Dahlman et al. (hereinafter "Dahlman"). Because claims 3-5 and 9 are dependent on one of claims 1 and 7, and because Dahlman does not cure the deficiencies of Hedberg, Hiramatsu, and Malladi discussed above, Applicants submit that the claims are patentable at least by virtue of their dependency.

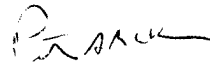
Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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